DOCUMENT RESUME

ED 448 340 CE 081 126

AUTHOR	Hurst, David; Hudson, Lisa
TITLE	Changes in High School Vocational Coursetaking in a Larger Perspective. Stats in Brief.
INSTITUTION	National Center for Education Statistics (ED), Washington, DC.
REPORT NO	NCES-2001-026
PUB DATE	2000-10-00
NOTE	6p.
AVAILABLE FROM	ED Pubs, P.O. Box 1398, Jessup, MD 20794-1398. Tel: 877-433-7827 (Toll Free). For full text: http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001026.
PUB TYPE	Information Analyses (070) -- Numerical/Quantitative Data (110)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Education; Allied Health Occupations Education; Child Care Occupations; *Course Selection (Students); Employment Projections; Enrollment; *Enrollment Influences; Enrollment Rate; Enrollment Trends; Food Service; High Schools; Hospitality Occupations; *Labor Market; *Student Educational Objectives; Technology Education; Trade and Industrial Education; *Vocational Education

ABSTRACT

The decline in vocational coursetaking from 1982-1998 is relatively small compared to increases in academic coursetaking. The potential trade-off between academic and vocational coursetaking seems to have been mitigated by students taking more courses overall and fewer courses in the general curriculum. Further, the decline in vocational concentration is due primarily to declines in the trade and industry and business program areas, areas that roughly correspond to occupations that have experienced below average growth rates since the early 1980s. Health care; technology and communications; food service and hospitality; and child care and education are four vocational programs areas in which a larger proportion of students concentrated in 1998 than they did in 1982. All four programs prepare students for occupations that have experienced above-average growth rates. These findings suggest that changes in vocational coursetaking may at least in part reflect responses to labor market trends. (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 448 340

National Center for Education Statistics

Changes in High School Vocational Coursetaking in a Larger Perspective

Stats in Brief
October 2000

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

CE 081 126

Stats *in Brief*

Changes in High School Vocational Coursetaking in a Larger Perspective

October 2000

From the 1980s to the mid-1990s, high school vocational coursetaking declined, as academic coursetaking increased (Levesque et al. 2000). Increases in high school graduation requirements (Medrich et al. 1992) and long-term trends for higher skill levels in the labor market (Rosenthal 1995) are two potential factors related to the rise in academic coursetaking. The decline in vocational coursetaking is not as easy to evaluate. First, vocational education includes course offerings ranging from computer programming to welding; the overall decline in vocational coursetaking may not reflect trends within specific vocational program areas. Second, changes in coursetaking occurred during a period in which the labor market underwent pronounced changes that may have affected students' decisions to complete specific vocational courses. This Stats in Brief takes a closer look at vocational coursetaking trends, examining them in light of labor market changes.

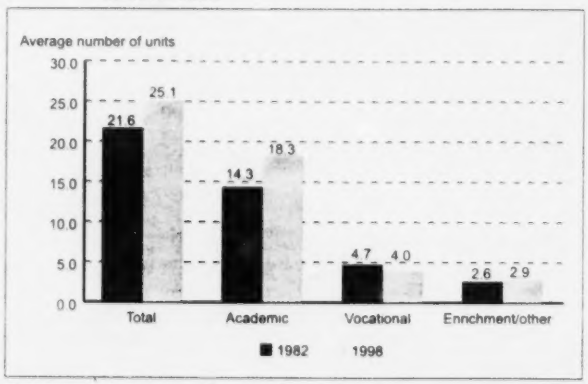
Changes in Vocational Coursetaking

While increased academic requirements may have resulted in some students having less time to take vocational courses, students' predominant method for accommodating additional academic credits seems to have been to increase the total number of credits they earn rather than sacrifice vocational courses. In 1998, students earned an average of 18.3 academic Carnegie[1] units, 4.0 more academic credits than students earned on average in 1982 (figure 1). At the same time, students earned 3.5 more **total** credits in 1998 (25.1 credits) than in 1982 (21.6 credits). In contrast, students earned 0.7 fewer credits in the vocational curriculum in 1998 (4.0 credits) than in 1982 (4.7 credits).

Another way to examine changes in vocational coursetaking is to compare the percentage of high school graduates who follow various curricular paths. This analysis shows that the primary shift in coursetaking between 1982 and 1998 was from general education preparation to a college preparatory curriculum, with a relatively small decline in the percentage of students concentrating in vocational education compared to changes in the other areas.[2] Between 1982 and 1998, the percentage of students who completed a vocational concentration declined from 33.7 to 25.0, or by 8.7 percentage points. Over the same time period, the percentage of students completing a college preparatory curriculum increased from 8.7 to 38.9, or 30.2 percentage points, and the percentage having a general education preparation declined from 58.2 to 42.6, a decline of almost 16 percentage points (not shown in figures).

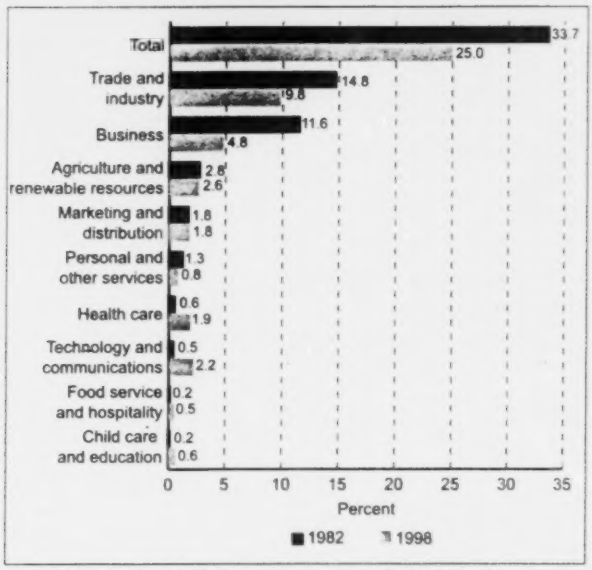
So while a smaller percentage of students completed a vocational concentration in 1998 than in 1982, the decline is relatively small given other changes in coursetaking. Moreover, most vocational program areas did **not** experience a decline from 1982 to 1998.[3] The overall decline in the percentage of students completing a vocational concentration was due primarily to declines in the two largest vocational areas—*trade and industry* and *business* (figure 2). While the percentage of students concentrating in *personal and other services* was also smaller in 1998 than in 1982, relatively few students concentrated in this area in either year. In contrast, the percentages of students concentrating in *health care*; *technology and communications*; *food service and hospitality*; and *child care and education* were **higher** in 1998 than in 1982, although the percentages of students concentrating in these areas remained comparatively small.

Figure 1.—Average number of Carnegie units accumulated by public high school graduates, by type of coursework: 1982 and 1998



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Sophomore Cohort 1982 High School Transcript Study and the 1998 High School Transcript Study.

Figure 2.—Percentage of public high school graduates concentrating (accumulating 3 or more credits) in various vocational programs: 1982 and 1998



SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Sophomore Cohort 1982 High School Transcript Study and the 1998 High School Transcript Study.

The percentages of students concentrating in *agriculture and renewable resources* and *marketing and distribution* were about the same in 1998 as they were in 1982.

Vocational Coursetaking and Occupational Trends

One factor that may influence a student's decision to concentrate in a specific vocational area is labor market demand; students may be more likely to concentrate in vocational areas that prepare them for occupations with increasing job opportunities. Although the labor market influences on vocational enrollment are likely to be complex (e.g., the accuracy of students' perceptions of labor market demand is unknown), it is nevertheless useful to examine changes in vocational education in light of changes in the labor market.

Figure 3 presents the percentage change in the number of jobs in specific occupations between 1983 and 1996; the vertical line represents the average percentage change for all occupations during this time period.[4] At least some of the change in student concentration in specific vocational areas appears to coincide with these changes in occupational employment. As noted above, *child care and education*, *health care*, *food service and hospitality*, and *technology and communications* were vocational areas in which the percentage of students concentrating was higher in 1998 than in 1982. Consistent with these changes, the occupational groupings of *child care workers and teacher aides; health service occupations; food preparation and service occupations*, and *technicians and related support occupations* experienced higher than average growth rates between 1983 and 1996.

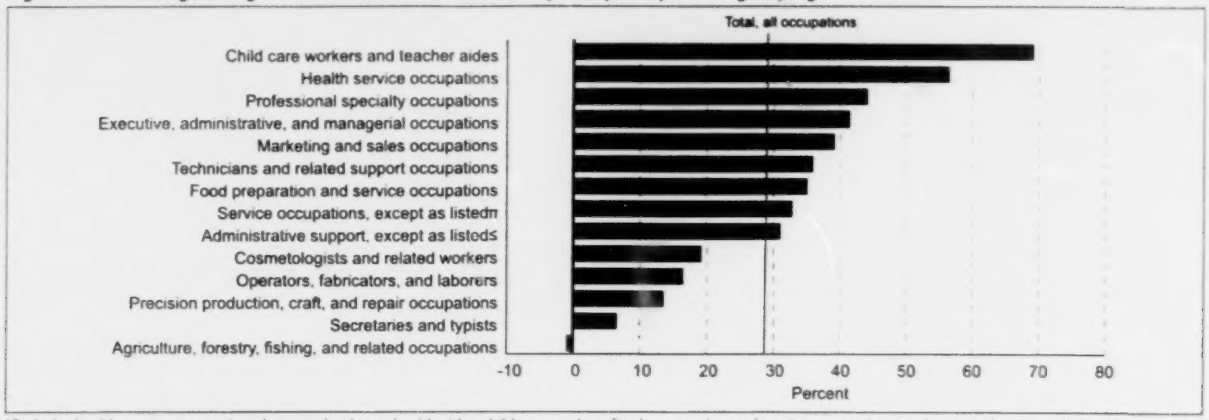
Further, the two vocational areas that largely account for the overall decline in the percentage of students concentrating in vocational education—*trade and industry* and *business*—roughly correspond to *precision production, craft, and repair*, and *secretaries and typists*,[5] both of which experienced below-average growth rates between 1983 and 1996.[6]

In the two remaining vocational areas, the link to the labor market is not as apparent. The percentage of students concentrating in *marketing and distribution* was statistically no different in 1998 than in 1982, while *marketing and sales* occupations grew at a higher than average rate between 1983 and 1996. About the same percentage of students concentrated in *agriculture and renewable resources* in 1998 as 1982, although *agriculture, forestry, fishing, and related occupations* showed no growth (a relative decline) between 1983 and 1996. This broad occupational group, however, consists of farmers and other farm occupations, which made up about half of *agriculture, forestry, fishing, and related occupations* in 1996, as well as a variety of other occupations, such as veterinary assistants and gardening workers. While farmers and farm occupations have declined over the past two decades, other occupations in this group have generally experienced average growth or better (not shown in figures). Thus, to the degree that courses in *agriculture and renewable resources* are relevant to occupations related to agriculture but not necessarily farming, enrollment trends may be consistent with occupational trends, remaining at roughly stable levels.

Conclusion

The decline in vocational coursetaking from 1982 to 1998 is relatively small compared to increases in academic coursetaking. The potential trade-off between academic and vocational coursetaking seems to have been mitigated by students taking more courses overall and fewer courses in the "general" curriculum. Further, the decline in vocational concentration is due primarily to declines in the *trade and industry* and *business* program areas. These vocational areas roughly correspond to occupations that have experienced below-average growth rates since the early 1980s. In addition, the four vocational program areas in which a larger proportion of students concentrated in 1998 than in 1982 prepare students for occupations that have experienced above-average growth rates. These findings suggest that changes in vocational coursetaking may at least in part reflect responses to labor market trends.

Figure 3.—Percentage change from 1983 to 1996 in number of jobs, by occupational grouping



[1] Excludes health service occupations; homemaker-home health aides; child care workers; food preparation and service occupations; and cosmetologists and related occupations.

[2] Excludes secretaries, typists, and teacher aides.

NOTE: The Bureau of Labor Statistics (BLS) provided the occupational employment estimates, although the composition of several BLS categories was modified for this analysis to better match the classification of vocational education courses used by NCES. Standard errors for the BLS categories (not listed here) were estimated based on the relative standard errors from BLS "Industry-Occupational Employment Matrix," the primary source of data for these occupational employment estimates.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, National Industry-Occupational Employment Matrix 1983–96 Time Series.

[1] In secondary education, one Carnegie unit is awarded for the completion of a course that meets one period per day for one year, or the equivalent. All student data included in this Stats in Brief refer to public high school graduates.

[2] A concentration in vocational education is defined as the completion of 3 or more credits in a single vocational program area such as *business*. A college preparatory curriculum includes the completion of at least 4 credits in English; 3 credits in mathematics at the algebra 1 level or higher; 2 credits in biology, chemistry, and/or physics; 2 credits in social studies with at least 1 credit in U.S. or World History; and 2 credits in a single foreign language. A general education curriculum meets neither of these criteria. Students meeting the criteria for both a vocational concentration and college preparatory curriculum are counted in both groups; therefore, the percentages sum to more than 100.

[3] This analysis does not examine the *protective services* vocational program area because less than 0.1 percent of students concentrated in this area in 1982 and 1998.

[4] Note that figure 3 presents the percentage change rather than numerical change. Some of the occupational groups with high rates of growth account for a relatively small share of all jobs. The assumption made in this brief is that changes in course enrollments are most likely to be influenced by occupational growth rates, even if the total number of jobs in those occupations is small compared to other occupations.

[5] The occupations of *secretaries and typists* were pulled out of *administrative support* occupations to highlight the main occupation for which *business* vocational education programs prepare students. The more general category of *administrative support* (excluding *secretaries and typists*), which includes a number of clerical occupations, experienced about average growth between 1983 and 1996.

[6] The other vocational area in which fewer students concentrated in 1998 than in 1982, *personal and other services*, roughly corresponds to *cosmetologists and related workers*, which also appears to have experienced below-average growth since 1983. However, there is not enough statistical evidence to determine if the growth rate of *cosmetologists and related worker* is significantly different from the total growth rate of all occupations.

References

Levesque, K., Lauen, D., Teitelbaum, P., Alt, M., and Librera, S. 2000. *Vocational Education in the United States: Toward the Year 2000* (NCES 2000–029). U.S. Department of Education. Washington, DC: U.S. Government Printing Office.

Medrich, E., Brown., Henke, R., and Ross, L. 1992. *Overview and Inventory of State Requirements for School Coursework and Attendance* (NCES 92–663). U.S. Department of Education. Washington, DC: U.S. Government Printing Office.

Rosenthal, N. 1995. "The Nature of Occupational Employment Growth: 1983–93," *Monthly Labor Review*, 118:45–54.

The **Stats in Brief** series presents information on education topics of current interest. All estimates shown are based on samples and are subject to sampling variability. All differences are statistically significant at the .05 level. In the design, conduct, and data processing of NCES surveys, efforts are made to minimize the effects of nonsampling errors, such as item nonresponse, measurement error, data processing error, or other systematic error.

This **Stats in Brief** was prepared by David Hurst of ESSI and Lisa Hudson of NCES. This **Stats in Brief** was desktopped by Carol Rohr and Allison Pinckney of PCCI. For further information, contact Lisa Hudson, National Center for Education Statistics at 202–502–7358 or lisa_hudson@ed.gov. To order additional copies of this **Stats in Brief** or other NCES publications, call 1–877–433–7827. NCES publications are available on the Internet at http://nces@ed.gov/.

The Stats in Brief series presents information on education topics of current interest.

Changes in High School Vocational Coursetaking in a Larger Perspective

NCES 2001-026

Stats in Brief

National Center for Education Statistics

Education Publications Center (ED Pubs)
U.S. Department of Education
P.O. Box 1398
Jessup, MD 20794-1398

Official Business
Penalty for Private Use, $300

Postage and Fees Paid
U.S. Department of Education
Permit No. G-17

First Class

ESSING &
EES BLVD
20706-4